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ABSTRACT

This study was designed to determine the career profiles of all science teacher graduates during the three study years from the Iowa Regents institutions. A questionnaire was mailed to each graduate, and responses were categorized into one of nine career profile patterns. An examination of the end point of each career pattern indicated that: 54 percent of the graduates currently are employed full-time in an academic position, 30.6 percent are employed in nonacademic positions, 9.8 percent are employed part-time, and 5.2 percent are not employed. A separate questionnaire was used to collect information on the graduates in nonacademic positions. Chi-square tests of significance were used on most of the 60 questionnaire items to identify those factors, skills, competencies, and experiences judged to be important by the respondents in terms of their current nonacademic positions. (MH)

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Abstract and Selected Tables From A Study Entitled:

An Analysis of Science Teacher Education Graduates From Three State Universities Currently Employed Full-Time in Nonacademic Positions

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Abstract

Seldom do institutions of higher education conduct follow-up studies of their graduates in sufficient detail to permit them to analyze the strengths and weaknesses of the institutions' curriculum in terms of the graduates' current employment. The study reported herein was designed to analyze the responses of 173 science teacher graduates from the 1964-1965, 1969-1970, and 1973-1974 school years. All respondents received their baccalaureate during one of the above study years from either Iowa State University, The University of Iowa, or the University of Northern Iowa.

The first objective of the study was to determine the career profiles of all science teacher graduates during the three study years from the Iowa Regents Institutions. A questionnaire was mailed to each graduate and responses (75.0% return, N = 173) were categorized into one of nine different career profile patterns. An examination of the end point of each career pattern indicates that: 54.3% of the graduates currently are employed full-time in an academic position, 30.6% of the graduates currently are employed full-time in nonacademic positions (positions other than teaching, administration or academic support positions in an elementary-secondary or collegiate institutions), 9.8% of the graduates currently are employed part-time, and 5.2% of the graduates have never been employed since receiving their science teaching certificate.

The second major objective of the study was to collect information on the members of the study sample that currently were using their science teacher preparation for full-time nonacademic employment. These graduates

held full-time occupations in eight of the nine major occupational divisions of the Dictionary of Occupational Trades.

Information from the full-time nonacademically employed graduates was collected on a 69 item questionnaire which sought to answer the following questions:

1. What skills and competencies obtained in the science teacher education program by graduates of one, five, and ten years ago were used to secure and to function in employment in nonacademic fields?
2. What factors led each science teacher graduate of one, five, and ten years ago to accept employment in nonacademic fields?

Over two-thirds of the science teacher graduates currently employed in nonacademic positions indicate that work experiences gained after completing the teacher education program were the single most important experience in preparing them to secure and to function in their current nonacademic positions. Experiences in the teacher education program were ranked least out of a list of six possible choices.

Location of employer (48.4 percent), opportunity to use special abilities or aptitudes (46.7 percent) and opportunity to exercise leadership (45.2 percent) were factors most often cited as highly important in determining acceptance of current nonacademic employment.

Information gathered in this study is being utilized as input into the science teacher education curriculum development process in each of the three Regents Institutions. Since the institutions are diverse in their nature (a land-grant institution, a state university, and a former teachers' college)

the data should be of value to teacher educators in other institutions of higher education who are concerned about their science teacher preparation curriculum in terms of graduates who find the science teacher preparation program a liberal arts option with a vocational choice.

Table 1

Distribution of Subjects by Teaching Major and Year.

Teaching Major	Number of Study Subjects by Study Year 1964-1965	1969-1970	1973-1974	Total	(percent)
Agriculture	15	44	26	85	(2.0)
Art	39	62	74	175	(4.0)
Business Education	39	49	39	127	(2.9)
Distributive Education	4	14	4	22	(0.5)
Driver Education and Safety	0	2	3	5	(0.1)
Elementary Education	245	535	522	1,302	(29.9)
English	72	163	105	340	(7.8)
Guidance and Counseling	2	3	0	5	(0.1)
Home Economics	69	130	118	317	(7.3)
Journalism	0	6	2	8	(0.2)
Foreign Language	32	75	46	153	(3.5)
Mathematics	71	88	76	235	(5.4)
Music	16	40	58	114	(2.6)
Physical Education	61	116	132	309	(7.1)
Psychology	3	8	14	25	(0.6)
Natural Sciences	45	75	53	173	(4.0)
Social Studies	52	158	87	297	(6.9)
Special Education	7	35	46	88	(2.0)
Speech	32	36	33	101	(2.3)
Librarian/Media Specialist	10	36	5	51	(1.2)
Industrial Arts	21	49	57	127	(2.9)
Nursery-Kindergarten	48	5	21	74	(1.7)
Other	4	17	7	28	(0.6)
No major listed	49	78	56	183	(4.3)
Total	936	1,824	1,584	4,344	(100.0)

Table 2

Distribution of Science Teacher Graduates

by Sex and Year.

	Number of Science Teacher Graduates		
Study Year	Male	Female	Total
1964-1965	33	12	45
1969-1970	49	26	75
1973-1974	30	23	53
Total (percent)	112 (64.7)	61 (35.3)	173 (100.0)

Table 3

Distribution of Science Teacher Graduates by Career Profile and Year.

Career Profile[a]	Number and Percent of Science Teacher Graduates							
	1964-1965		1969-1970		1973-1974		Total	Percent
	N	%	N	%	N	%		
A1	26	57.8	34	45.3	29	54.7	89	51.4
A2	1	2.2	2	2.7	2	3.8	5	2.9
B1	6	13.3	21	28.0	10	18.9	37	21.4
B2	3	6.7	10	13.3	3	5.7	16	9.2
C1					1	1.9	1	0.6
C2			3	4.0	5	9.4	8	4.6
C3	7	15.6	4	5.3	2	3.8	13	7.5
C4	1	2.2	1	1.3	1	1.9	3	1.7
C5	1	2.2					1	0.6
TOTAL	45	100.0	75	99.9	53	100.1	173	99.9

CAREER PROFILE CATEGORIZATION SYSTEM[a]

A. Current Full-time Academic Employment

1. Full-time employment has always been in an academic field.
2. Full-time employment has included both academic and nonacademic fields.

B. Current Full-time Nonacademic Employment

1. Full-time employment has always been in a nonacademic field.
2. Full-time employment has included both nonacademic and academic fields.

C. No Current Full-time Employment Outside the Household

1. Full-time employment has always been as a homemaker.
2. No full-time employment since receiving a teaching certificate.
3. Has held full-time academic employment.
4. Has held full-time nonacademic employment.
5. Has held both full-time academic and nonacademic employment.

Table 4

Current Occupation of Science Teacher Graduates

Expressed as a Percent of All Graduates for Each Study Year.

Occupation	Percent of Science Teacher Graduates by Study Year			Mean Percent of Graduates
	1964-1965 (N=45)	1969-1970 (N=75)	1973-1974 (N=53)	
Education	60.0	48.0	58.5	54.3
Professional (science related)	8.9	9.3	7.5	8.6
Professional (nonscience related)	4.4	8.0		4.6
Clerical		6.7	3.8	4.0
Sales-merchandising	4.4	2.7	5.7	4.0
Industrial		5.3	5.7	4.0
Farming	2.2	4.0		2.3
Military		5.3	1.9	2.9
Student	4.4	5.3	9.4	6.4
Homemaker-unemployed	15.6	5.3	7.5	8.7
TOTAL	99.9	99.9	100.0	99.8

Table 5

Distribution of Study Subjects Currently Employed in Nonacademic Occupations by Teaching Major and Year.

	Number of Study Subjects Study Year				
Teaching Major	1964-1965	1969-1970	1973-1974	Total	(percent)
Agriculture	8	21	8	37	(7.0)
Art	9	5	6	20	(3.7)
Business Education	5	9	8	22	(4.1)
Distributive Education	0	2	0	2	(0.4)
Driver Education and Safety	0	0	3	3	(0.6)
Elementary Education	5	34	45	84	(15.5)
English	3	20	12	35	(6.5)
Guidance and Counseling	0	1	0	1	(0.2)
Home Economics	5	17	22	44	(8.1)
Journalism	0	1	1	2	(0.4)
Foreign Language	1	12	10	23	(4.2)
Mathematics	14	15	12	41	(7.6)
Music	3	3	9	15	(2.8)
Physical Education	2	13	27	42	(7.7)
Psychology	0	2	3	5	(0.9)
Natural Sciences	7	17	8	32	(5.9)
Social Studies	7	30	22	61	(11.3)
Special Education	0	0	1	1	(0.2)
Speech	6	7	6	19	(3.5)
Librarian/Media Specialist	2	2	0	4	(0.7)
Industrial Arts	5	13	9	27	(5.0)
Nursery Kindergarten	1	0	1	2	(0.4)
Other	1	3	1	5	(0.9)
No major listed	3	6	3	14	(2.6)
Total	87	233	217	537	(100.0)

Table 6

Experience Necessary To Qualify For Current Nonacademic Positions As Perceived By Science Teacher Education Graduates.

Area of Experience	Number	Respondent Evaluation of Experience Importance, percent			
		Highly Important	Somewhat Important	Somewhat Unimportant	Highly Unimportant
Major subject field	30	30.0	20.0	16.7	33.3
Minor subject field	27	11.1	33.3	14.8	40.7
Teacher education	30	10.0	36.7	16.7	36.7
General education	30	16.7	46.7	13.3	23.3
World of work prior to completing teacher education program	29	24.1	41.4	17.2	17.2
World of work after completing teacher education program	27	40.7	29.6	7.4	22.2

Table 7

Factors Influencing Science Teacher Education Graduates
To Accept Full-time Nonacademic Employment

Factor	Number	Respondent Evaluation of Factor Importance, Percent			
		Highly Important	Somewhat Important	Somewhat Unimportant	Highly Unimportant
1. Opportunity to use special abilities or aptitudes	30	46.7	33.3	13.3	6.7
2. Opportunity to earn a large salary	32	21.9	34.4	21.9	21.9
3. Opportunity to be creative & original	32	37.5	25.0	21.9	15.6
4. Social status and prestige	31	12.9	32.3	22.6	32.3
5. Opportunity to work with people	32	37.5	37.5	12.5	12.5
6. Opportunity to work with things rather than people	32	12.5	18.8	28.1	40.6
7. Freedom from supervision by others	32	28.1	25.0	28.1	18.8
8. Greater opportunity for advancement	32	34.4	31.3	15.6	18.8
9. Opportunity to exercise leadership	31	45.2	29.0	16.1	9.7
10. Opportunity to help and serve others	31	41.9	25.8	25.8	6.5
11. Adventure	31	29.0	25.8	25.8	19.4
12. Opportunity to work with adults rather than children	32	21.9	18.8	28.1	31.3
13. Felt better prepared for current position than teaching	31	9.4	12.5	40.6	34.4
14. Location of the employer	31	48.4	25.8	6.5	19.4
15. Dissatisfaction with prior educational experiences	32	28.1	15.6	12.5	43.8
16. Retirement, health care and other benefits	32	15.6	25.0	21.9	37.5